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JUL 20 1955

THRUSH



A Continuous Flow of

RADIANT HEAT!



ENDS "COLD 70"

FRANKLIN HEAT CO.
PHILADELPHIA



A FEELING OF COMFORT AND WELL BEING SUCH AS YOU HAVE NEVER ENJOYED BEFORE

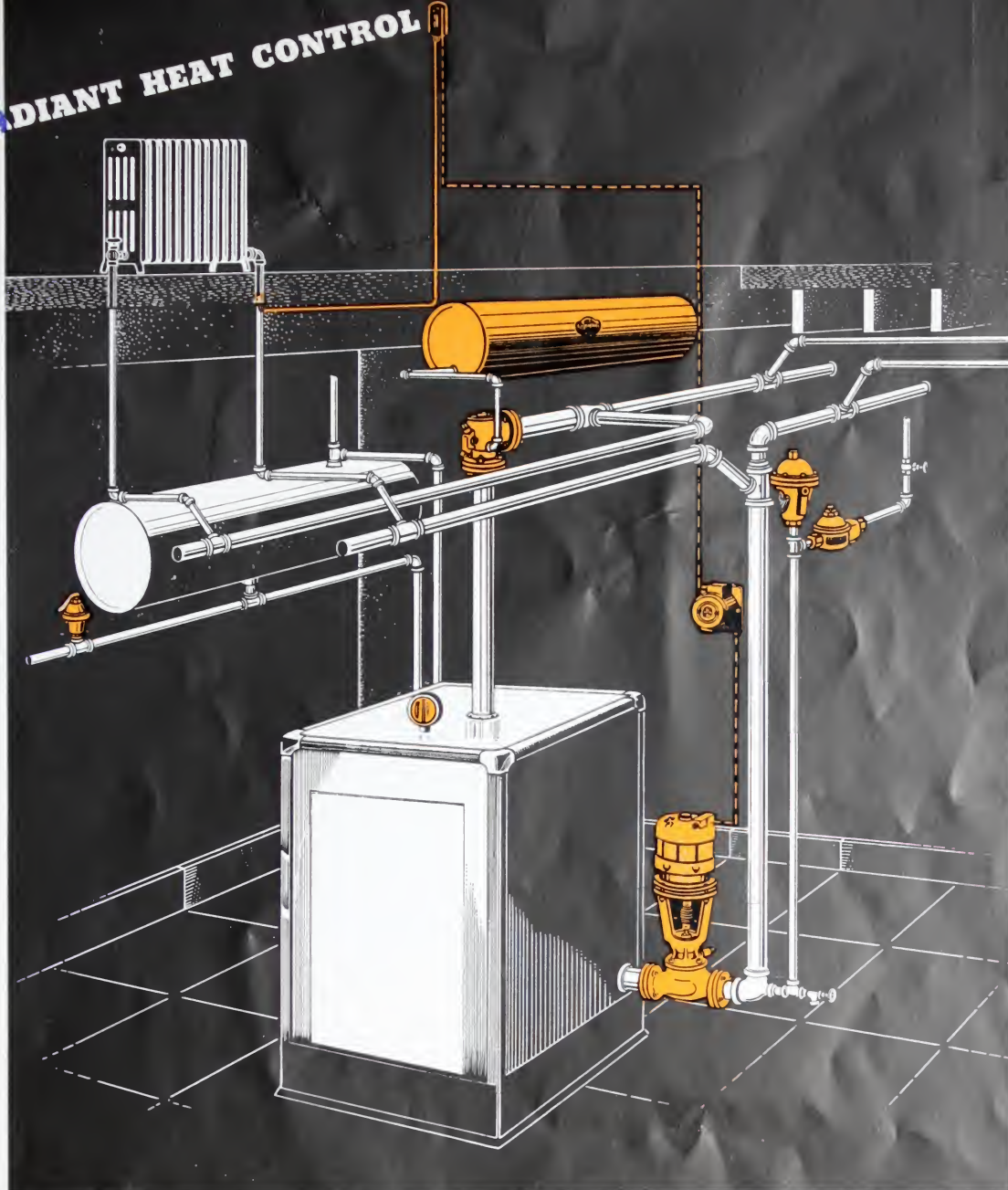
Thrush Flow Control Hot Water Heating is more completely automatic than was ever before possible in residential heating. It is "micrometrically controlled" heating — as sensitive to change as the human body itself. It produces a feeling of comfort and well being never before experienced from any type of artificial heat.

Body comfort is maintained by radiant heat. Only when some radiant heat is present in the room can comfort be complete. Thrush System controls the warmth of the radiators—prevents "cold 70" by providing a constant supply of radiant heat.

No more worry about "quick" heat, for the new Thrush System furnishes continuous heat. Fluctuations are gone. No more waiting for the firing device to heat the water in the system—no more overheating. It is something new! It is revolutionary. It means constant bodily comfort, — the thing which you have spent your life seeking. It means an end to wasteful over-heating, too, with true fuel economy!

THRUSH FLOW CONTROL HOT WATER HEATING SYSTEM

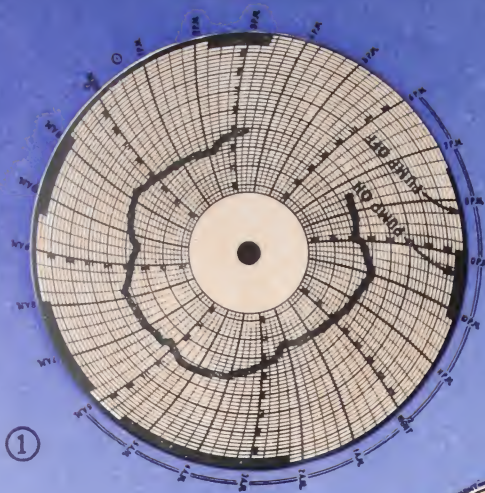
THRUSH RADIANT HEAT CONTROL



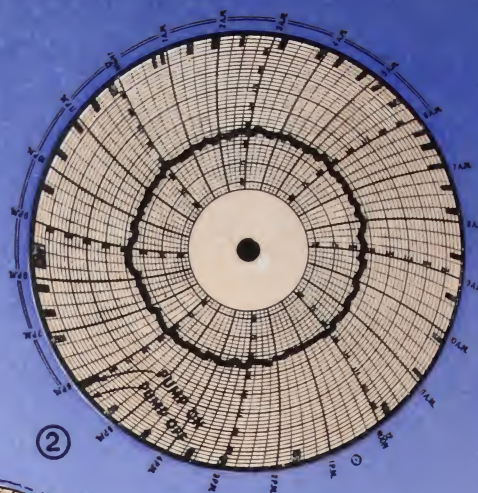
Patent Reissue No. 19873

A COMPLETELY COORDINATED HOT WATER HEATING SYSTEM!

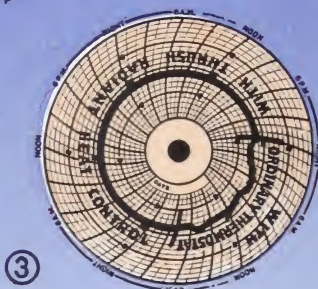
Thrush Flow Control System is self-operating the year around. Thrush devices (in orange) provide continuous Radiant Heat with forced circulation, dependable pressure relief and automatic filling of the boiler. Year 'round domestic hot water supply is a by-product. These sensitive, highly coordinated controls are almost human in their action. The home owner can forget about heating completely. Summer or winter, heating and domestic water service are automatic.



① This chart shows the fluctuation of radiator temperatures during a twenty-four hour period using the ordinary type of control. It also shows the operating periods of the Circulator. While the room temperature may vary only two or three degrees, there is a distinctly unpleasant feeling of chilliness when the radiator temperature drops as shown here.



② This chart shows the same heating plant with Thrush Radiant Heat Control. Note the much more even radiator temperatures and the more frequent but extremely short periods of Circulator operation. Fluctuations are eliminated and radiant heat is maintained so that there is no feeling of chilliness at any point, and no urge to "set up" the thermostat. A lower thermostat setting will keep the home comfortable at all times.



③ 72-HOUR PERIOD

This chart shows room temperature variation before and after the installation of Thrush Radiant Heat Control. The irregular line indicates the ordinary fluctuation of room temperatures, while the even line shows the absolute uniformity of temperatures maintained by Thrush Radiant Heat Control.

NO TEMPERATURE FLUCTUATIONS

The Thrush Radiant Heat Control guarantees absolutely balanced heating—that continuous flow of radiant heat which provides a new comfort never before possible with previous heating methods. The automatic firing device operated by an immersion type water temperature control maintains a constant supply of hot water in the boiler, which is distributed by forced circulation when the thermostat cuts in. When room temperature drops a fraction of a degree the radiant element will respond to a change of a few degrees in water temperatures to offset outdoor weather conditions. The water from the boiler is then pumped into the system and as the radiator temperatures have fallen very slightly, the temperature of the water in the radiator system is raised by the boiler full of hot water **ALONE** back to the comfort point. Then the Radiant Heat Control stops the Circulator. The extremely small fluctuations in the radiator temperatures result in almost no measurable fluctuations of room temperatures. This means there will be no more of that distinctly unpleasant feeling of chilliness known as "cold 70" when the radiators have lost all radiant heat.



THE THRUSH FLOW CONTROL VALVE

Prevents overheating and consequent waste of fuel. In summer or winter, without attention and with perfect safety—this valve is the dependable, automatic traffic policeman of your heating plant. It works by pressure head generated by the Thrush Circulator and if the thermostat never calls for heat in the rooms above, no heat passes from the boiler beyond this valve. When the thermostat calls for heat the circulator starts and this valve opens instantly.

An opening below the seat provides for ample expansion of water in the system without permitting any heat to get into the radiators when it is not wanted. As air and gases are liberated from water in the boiler they are diverted into the pressure tank instead of to the radiators. Only one valve is required.

TAKES THE PLACE OF FIVE OR MORE FITTINGS



P L E N T Y O F H O T W A T E R

A Thrush Flow Control System on your hot water heating plant will provide automatic domestic hot water the year around at a very nominal cost. Because the water in the boiler is maintained at a temperature ranging from 160° to 220°, an indirect water heater is highly efficient. The water supply is really hot. It eliminates the cost of installing and supplying fuel for a separate heater. The regular firing device continues to function right through the summer. The Thrush Flow Control Valve automatically prevents heat from getting into the radiators when heat is not required in the house.

ZONE CONTROL • SIMPLE • POSITIVE

Thrush System, because of the features listed above can be applied to the zone operation of a heating system, so that one boiler can be used to maintain different temperatures in separate apartments, adjoining houses or greenhouse and residence on large estates, etc. A separate Circulator, Flow Control Valve and Radiant Heat Control installed for each zone maintain the desired temperatures as effectively and more economically than if separate heating plants were used.



Patent No. 2,054,009

THE THRUSH WATER CIRCULATOR

The Thrush Water Circulator is a highly efficient centrifugal type water circulating pump especially designed for use with a hot water heating system. It assures immediate circulation of high temperature water through every radiator in the System (even if below the level of the boiler) the moment that the Radiant Heat Control calls for heat. It instantly restores the temperature of the radiators (which is allowed to fall only slightly), by pumping the entire boiler of hot water into them. It is obviously more economical to keep the small quantity of water in the boiler constantly hot than it is to let the whole system cool off and then try to heat up the entire system suddenly. Operation of the circulator at frequent intervals by the Radiant Heat Control keeps room temperatures right at the comfort point.

QUIET • EFFICIENT • POWERFUL

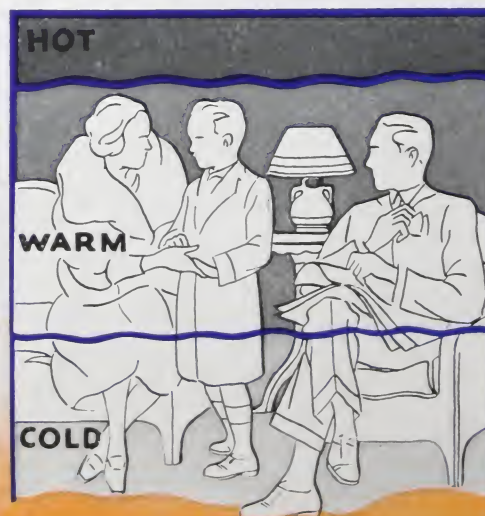


ELIMINATES "COLD 70" COMPLETELY

In many a home that is heated the ordinary way, you sit and shiver even though the thermometer on the wall indicates the room temperature desired. The reason for it is lack of radiant heat. The human body is warmer in a cold room where there is radiant heat than it is in a warm room where radiant heat is entirely absent. With Thrush System the radiators are always kept at the right temperature, never allowed to become overwarm or overcool. This results in a gentle, continuous flow of warmth and maintains the room temperature at an absolutely even level.

ENDS STRATIFICATION OF HEAT!

Another condition which frequently exists when radiators cool is stratification of heat. This "layer-cake" effect is caused by the supply of heat starting and stopping suddenly. It is cold around your knees and hot above your head where the heat does no good. With Thrush Radiant Heat Control giving a continuous flow of heat, these layers do not form. Every part of every room is uniformly warm—even the floors where the children play.





Patent Reissue No. 19300

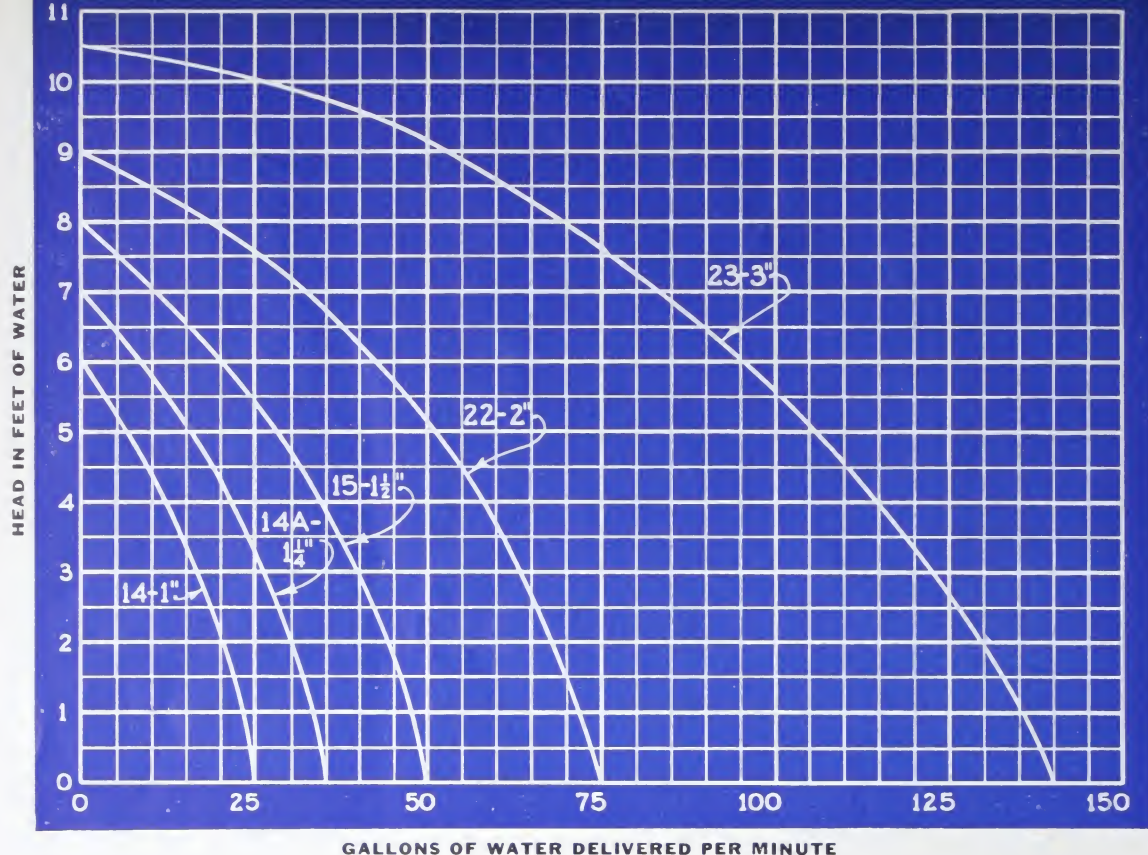
THE THRUSH RADIANT HEAT CONTROL

The Thrush Radiant Heat Control automatically controls the circulation of hot water so that the warmth of the radiators (or convectors) is constantly maintained to supply just the right amount of heat to the rooms to keep the temperature at the thermostat setting. It thus maintains room temperature within a fraction of a degree. If the outside temperature falls the radiator temperatures are automatically raised to provide the necessary heat output to maintain a practically constant room temperature. It's as sensitive to change as the human body itself.



ANTICIPATES OUTSIDE WEATHER CHANGES

No. 198 Thrush Relay Transformer for use with sensitive low voltage Thrush Radiant Heat Control.



THRUSH CIRCULATOR IS EFFICIENT

The chart above indicates the capacity of each of the five sizes of Thrush Water Circulators in pressure curves. It shows the actual capacity in gallons of water delivered per minute in relation to the pressure head.

Only a centrifugal type pump of high efficiency and correct design can possibly do the work required in a hot water heating system, for a pump of the agitator type sometimes used cannot set up the rapid circulation necessary to restore room temperatures quickly. The Thrush Circulator has the power you need.

The Thrush Circulator has demonstrated its efficiency in many years of actual performance. It saves more than it costs. It prevents or cures many circulation troubles.

The design of the impeller assures greatest efficiency with small power consumption. The motor is quiet. Flexible, stainless steel drive shaft assures freedom from vibration. Wide water passages permit thermal circulation through and around the impeller when motor is not running.

HERE'S COMFORT THAT PAYS FOR ITSELF

A COMPLETE PRESSURE SYSTEM



AIR-TIGHT THRUSH PRESSURE TANK

A reservoir for expansion. Absolutely air-tight — tested under pressure.



No. 4 THRUSH DIFFERENTIAL PRESSURE RELIEF VALVE

Provides absolutely safe relief of excessive pressures. Listed as Standard by the Underwriters' Laboratories.



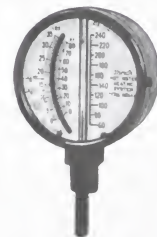
No. 75 THRUSH RELIEF VALVE

A dependable automatic Relief Valve that safely protects the domestic hot water supply system from excessive pressure.



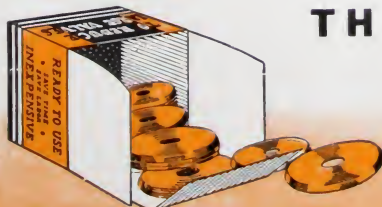
No. 12 THRUSH PRESSURE REDUCING VALVE

Provides automatic filling of the system and maintains proper amount of water at all times.



SPECIAL COMBINATION THRUSH GAUGE AND THERMOMETER

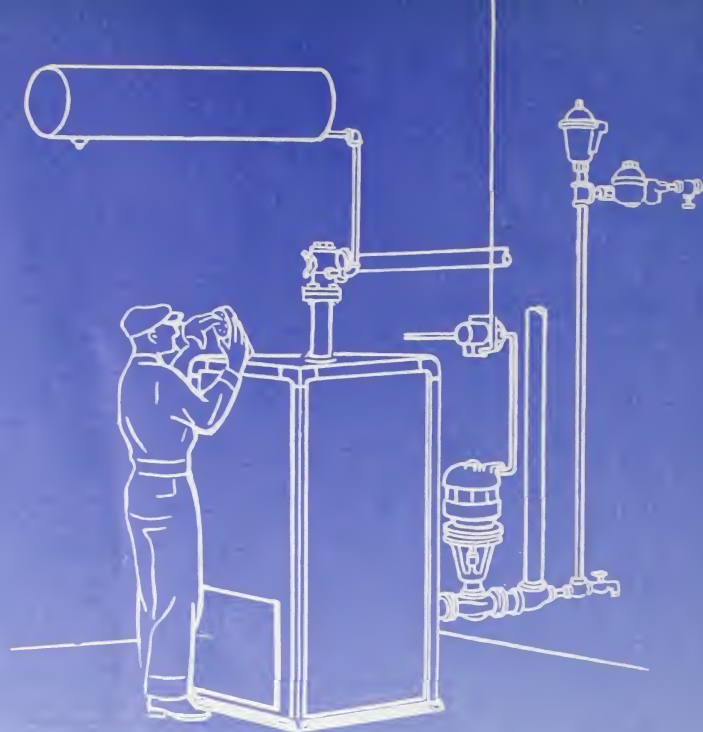
Thrush Flow Control combines the advantages of forced circulation and Flow Control with the already highly efficient Thrush Pressure System which accounts for its genuine superiority over all imitations. Be sure to use Thrush Equipment.



THRUSH ORIFICE INSERTS

Ready-made inserts in five standard sizes used to balance circulation thru radiator valves in old, big pipe conversion jobs to assure uniform heat in every radiator.

EVERY THRUSH FEATURE IS TESTED BY TIME!



THRUSH SYSTEM IS EASY TO INSTALL

Thrush Flow Control System is very easy and inexpensive to install. Compare diagrams of similar systems with Thrush. There are fewer fittings and no large pipes to cut and thread. Because greatly reduced pipe sizes may be used, the total cost of the entire installation using copper pipe is less than that of an ordinary gravity job and compares favorably with the cost of installing a good warm air system. It can be quickly applied on either conversion jobs or new installations.

SPECIAL NOTE ON USE WITH CONVECTORS AND SPLIT SYSTEMS

Thrush Flow Control System has even greater advantages on a hot water job using convectors instead of radiators to heat the rooms, or a split system by which some rooms are heated by radiators and others by an air conditioner. Convectors, holding very little water, do not hold heat very long, so it is obviously much more important to keep the water temperatures at a point where radiant heat is continuously emanating. This prevents air stratification and assures the same feeling of comfort as with a system having radiators. In fact Thrush Flow Control System is almost the only means by which radiant heat can be maintained under such circumstances. Air conditioning with Thrush Hot Water System not only provides this added comfort of radiant heat, but cleaner and more wholesome air than is possible with a warm air furnace

H. A. THRUSH & CO., PERU, INDIANA

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